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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,584	02/05/2002	Laszlo Marton	16139/09017	8264

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EXAMINER	
HAAS, WENDY C	
ART UNIT	PAPER NUMBER
1661	

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/068,584	MARTON ET AL.	
	Examiner	Art Unit	
	Wendy C Haas	1661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-8,15,17-28,30, 32, 34, 36-42, 44, and 46-62* is/are pending in the application.

4a) Of the above claim(s) *24-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *33, 35, 43 and 45* is/are objected to.

8)☒ Claim(s) *6, 28, 30, 34, 42, 44, and 60-62* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *0725*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Applicant's cancellation of claims 24-31 drawn to an invention nonelected with traverse in Paper No. 4 is noted. Claims 6, 28, 30, 34, 42, 44, and 60-62 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected subject matter, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 4. Specifically, claims 6, 34, 42, and 44 are drawn to a non-elected species, and claims 28, 30 and 60-62 are directed to non-elected subject matter. This application contains claims 6, 28, 30, 34, 42, 44 and 60-62 drawn to an invention nonelected with traverse in Paper No. response to election/restriction. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Comments

The claims filed in the present application as applied to the elected species, *Spartina alterniflora*, appear to be allowable. Accordingly, under the Markush practice of the Office the search has been expanded to include another of the family Poaceae. Specifically, the Examiner searched the genus *Spartina* and rice. The search will not be expanded further, as the generic claims are not allowable.

The Examiner will address only the arguments from the response to the prior Office Action that are relevant to the rejections contained in this Office Action. Gallagher et al. teach DNA transformation of halophyte species using a particle gun. This method of DNA transformation is well-known in the art and has been successfully applied over a wide range of

plant species. The difficulty of effecting transformation via this method is not so high as to require undue experimentation. Meagher et al. also describe that methods of DNA transfer using *Agrobacterium* are well known in the art and are applied over a wide variety of species. The references available to demonstrate use of these methods in DNA transformation of monocot, or Poaceae are numerous, however the Examiner has chosen Gallagher et al. and Meagher et al. to illustrate that transformation of *Spartina,* specifically is known in the art.

Linder et al. is relied on to teach that use of an immature infloresence as an explant for monocot/Poaceae species is known in the art.

Drawings

The objection to the drawings is withdrawn.

Double Patenting

The provisional double patenting rejection is withdrawn because the co-pending case is now abandoned.

Claim Objections

Claim 33 is objected to because of the following informalities: "Cyperuspseudovegetus" is not a known term of art. It appears this may be a typographical error. Appropriate correction is required.

Claim 35 is objected to because of the following informalities: "Spartina. Patens." is not a known term of art. It appears this may be a typographical error. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The previous rejections under 35 U.S.C. § 102 are withdrawn.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 21, 41, and 59 rejected under 35 U.S.C. 102(b) as being anticipated by Mendoza et al, Mendoza et al disclose a tissue culture method where rice (*Oryza sativa*) seeds are (1) cultured on a primary medium comprising two auxins (2,4-D and NAA) and a cytokinin (BA), (2) sub-cultured on a secondary medium that comprises the cytokinins BA and kinetin to forms plants with roots and shoots in at least the cultivar UPL-Ri-3, (3) further cultured on a tertiary medium lacking growth regulators and (4) acclimated in soil.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15, 17, 36-40 and 48-54 are rejected under **35 U.S.C. 103(a)** as being unpatentable over **Mendoza et al** in view of **Mantell et al**.

The teachings of Mendoza et al. are set forth above. Mendoza et al. do not teach the specific growth regulator combinations and concentrations listed in claims 15, 17, 36-40 and 48-54.

Mantell et al. teaches it is routine to optimize culture conditions of media to enhance the overall propagation performance of a given species.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the parameters of the experiment to choose specific auxins and cytokinins that a given species of interest best responds to. Given unlimited time and resources to search the 500 genera and 8,000 species of Poaceae, the examiner could most likely identify specific 102(b) references for these obvious claims. However the critical inventive steps, i.e. use of at least two auxins and one cytokinin in the primary medium, use of at least one cytokinin in the secondary medium, and lack of growth regulators in the tertiary medium are all present in Mendoza et al.

One would be **motivated** to modify plant tissue culture media components within a wide range of parameters that have shown success in related species to choose any convenient medium that would be expected to yield superior results. As such, the invention as a whole was *prima facie* obvious at the time it was made.

Claims 7, 8, 46 and 47 are rejected under **35 U.S.C. 103(a)** as being unpatentable over **Mendoza et al.** in view of **Mantell et al.,** as applied to claims 15, 17, 36-40 and 48-54 above in view of **Hartmann et al., Linder et al. or Barro et al.**

The teachings of Mendoza et al. and Mantell et al. are set forth above. Mendoza et al. and Mantell et al. do not teach the use of an immature inflorescence as an explant.

Hartmann et al teach that segments of immature inflorescences are highly regenerative explant choices in many species. They also note that most tissue culture methods require slicing the explant tissue into small segments. Hartmann et al. note that many herbaceous species of plants root readily in tissue culture conditions and no special rooting step or acclimation need apply to these species.

Linder et al. teach a method for producing *Arundo donax* plants by culturing immature inflorescences on a primary medium containing mineral nutrients, vitamins, and auxin in order to produce totipotent callus tissue and then placing the callus on MS medium to regenerate whole plants with shoots and roots.

Barro et al. teach a method for producing wheat plants from immature inflorescence explants, nothing that the embryogenic capacity from immature infloresences is 30% greater than that of immature scutella.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to use the method of Mendoza et al. in view of Mantell et al. as modified by the teachings of Hartmann et al., Linder et al. and Barro et al. to produce tissue cultured Monocot/Poaceae plants. Applicant would be motivated to use the teachings of Hartmann et al., Linder et al. and Barro et al. to utilize an immature inflorescence as an explant for ease of

rengeration as it is considered a highly renegerable explant source, has proven successful in at least two related Poaceae species, and can be harvested without significant damage to the parent plant.

A number of **motivations** for this use of an immature inflorescence are provided by Barrio et al.: "[a]dvantages of using inflorescence tissue . . . are that explants are harvested from younger plants reducing glasshouse/growth chamber requirements and that physiological status of donor plants appear to have less influence on explant response in culture." Barrio et al., pg. 161. As such, the invention was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 15, 17, 36-40 and 48-54 are rejected under **35 U.S.C. 103(a)** as being unpatentable over **Mendoza et al.** in view of **Gallagher et al. and Meagher et al.**

The teachings of Mendoza et al. are set forth above. Mendoza et al. do not teach transformation of the cultured rice plants.

Gallagher et al. teach DNA transformation of halophyte monocot species using a particle gun.

Meagher et al. teach that numerous methods for producing a transgenic plant are known in the art, including *Agrobacterium,* electroporation, particle bombardment and direct DNA transfer. (Col. 14, lines 33-54).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to use the method of Mendoza et al. to produce and/or transform tissue cultured plants.

One would be **motivated** to genetically transform the cultured plants to exhibit desired traits by any method known in the art, as Gallagher et al. and Meagher et al. teach that nearly any known method chosen would show success.

As such, the invention was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Allowable Subject Matter

Claims 35 and 45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 33 and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if

(1) rewritten in independent form including all of the limitations of the base claim and any intervening claims,

(2) all species outside the genus *Spartina* were removed from the claims.

Conclusion

No Claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wendy C. Haas whose telephone number is (703) 308-8898. The examiner can normally be reached on Monday through Friday from 9 a.m. to 5:30 p.m. The Examiner's telephone number will change to (571) 272-0976 effective January 7, 2003.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (703) 308-4205. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 872-9305.

W. C. Haas

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